

# GREENCITY BUSINESS

CLIMATE CHANGE: ECONOMIC OPPORTUNITIES AND CHALLENGES



## GreenCity-Business 2015 SYNOPSIS:

### 20 PROPOSALS FOR THE COP21 ACTION AGENDA



#### 1/ Greencity-Business 2015: from shared analysis to action

##### *The Descartes Cluster prepares for COP21*

On 12 November 2015, over twenty French and European corporate managers and experts and more than 200 participants converged on the Cité Descartes to attend *GreenCity-Business 2015*. The event took place at IFSTTAR headquarters under the chairmanship of the FCBA and with the backing of Paris-Est COMUE. It was organised by Descartes Development, Seine & Marne Development agencies and the planner EPAMARNE.<sup>1</sup>

As the result, a wide-ranging group of public and private sector partners, *GreenCity-Business* was the last major event under the COP21 label before the actual Conference itself. It was the opportunity to highlight how efforts to drive down greenhouse gases can act as a catalyst for entrepreneurship, research and regional development.

*GreenCity-Business 2015 – a synopsis: 20 proposals for the COP21 Action Agenda* is the Descartes Cluster's contribution to COP21 in the building, mobility and energy sectors.<sup>2</sup>

##### *Open Innovation or how to make better use of existing growth and job creation opportunities*

*Open Innovation* and major groups: in addition to their efforts to market and communicate about smart cities or innovation, major groups need to come to terms with the growing pace of change: data sharing, system interoperability, anticipating on short and medium-term risks.

From *IBM* to *Unibail Rodamco* or *Orange*, economic, financial, industrial or service-oriented innovation is contingent on proper management of increasingly complex ecosystems and new forms of partnerships with SME or start-ups, not least in filing and exploiting patents.

For SME and start-ups, management of the *interfaces* with users is a potential source of growth where their skills and flexibility can be of crucial importance. Examples of energy efficiency in buildings (*Geceha*, *IE Conseil*) or in large-scale 3D regional modelling (*CDI Technologies*, *Enodo* and *Astainable*) are typical illustrations of as yet underexploited potential growth and job creation opportunities.

Competitiveness clusters need to become “*product factories*” rather than just ideas incubators. Regional stakeholders (local authorities, planners, etc.) should join forces with firms and enterprises (public and private sector procurement departments) in striving to make innovation a source of growth.

##### *Towards a better understanding of the economic and industrial rationale behind innovation and investment cycles*

Better understanding the rationale behind innovation and investment cycles is a matter of priority if regional environment policies are to fuel substantial short-term job creation. There is considerable disparity in the stage reached in the different sectors. It is probably in the energy sector that the most specific feedback from demonstrators (for example, *Issy Grid* or *Nice Grid*) has been obtained.

There are a number of technologies that have reached maturity and are immediately available for both infrastructure and network management and for urban-scale data collection and analysis.

1 IFSTTAR: French Institute of Science and Technology for Transport, Development and Networks (<http://www.ifsttar.fr/en/welcome>). FCBA : National Industrial and Technological Institute for Forestry, Cellulose, Construction Timber and Furniture (<http://www.fcba.fr>). COMUE Paris-Est: Paris East University Community (<http://www.univ-paris-est.fr/fr>). EPAMARNE : Marne-la-Vallée new town public development establishment (<http://www.epa-marne-lavallee.fr/en/>)

2 COP21 rests on 4 pillars: 1/ a universal climate agreement on driving down CO2 emissions and curbing rises in temperature across the planet, 2/ individual national undertakings, 3/ roll out of technologies and financial resources in the interests of developing countries prepared to commit to COP21, and 4/ the Action Agenda (Paris-Lima Action Plan) that must involve civil society players (companies, academics, etc.). With regard to the Action Agenda, a number of specific one-day seminars are to be held during COP21, in particular Transport Day and Building Day, on 3 December 2015.



The skills and experience of major industrial groups such as *Alstom Grid* (henceforth *GE Grid Solutions*) will be vital in helping us establishing the scale on which energy innovations (*microgrids*) should be rolled out in the regions to have a true effect. Input from PME and start-ups (*The Cosmo Company*, *Sylfen*) will be invaluable in enabling us to ascertain where and when concepts are ready for practical implementation. Energy Transition Institutes (ITE), such as *Efficacy*, will play a key role in weighing up the different longer-term innovations and giving formal status to immediately effective operating processes. For the Grand Paris project, potential for progress already exists but needs to be exploited, in particular in Grand Paris Express station catchment areas.

Last but not least, projects such as *NewWind* clearly illustrate the determination and commitment required for ground-breaking innovation.

### European and international consensus: how to apply the COP21 Action Agenda

While efforts today are focused on fostering sector *alliances* and *coalitions*, analysis of innovation strategies points to the need for clearer identification of the regional impact of new technologies. In addition, there is a real and growing risk of widening the social or economic divide.

One of the targets of the COP21 *Action Agenda* is to create a *Global Alliance for Buildings and Construction* in order to establish a sustainable common denominator for technologies, public contracts and policies. This approach is promising but only if the following factors are taken into account:

- ❶ **In a number of sectors, ground-breaking technologies are available but few people have the skills and knowledge to apply them.** Requirements by far exceed the operational solutions needed to put such technologies into practice.<sup>3</sup>
- ❷ **Despite the many highly apposite initiatives that have been launched across the world, these remain too segmented** to offer a real global structural change (scaling up).
- ❸ **Academics, researchers and trainers have a particular role to play in improving our understanding of the interaction** and transforming urban *infrastructures* and *practices* in order to enlighten the community on the future and potential growth opportunities.
- ❹ **Clusters and networks:** steps must be taken to boost public-private cooperation in the form of clusters and networks such as *Climate KIC*<sup>4</sup> Spreading innovation to the regions can be achieved by galvanising the *clusters* and *networks* into action.

3 cf. in particular the Manifeste de Strasbourg Energivie. Le Bâtiment au cœur de la transition énergétique. The Strasbourg Energivie Manifesto. Buildings at the Heart of the Energy Transition [http://www.pole.energievie.eu/sites/default/files/page-docs/manifeste\\_energievie\\_version\\_finale.pdf](http://www.pole.energievie.eu/sites/default/files/page-docs/manifeste_energievie_version_finale.pdf)

4 <http://www.climate-kic.org>

## 2/ Reinforcing common research, entrepreneurship and regional denominators

**Corporate innovation strategies are changing.** Major groups cannot operate by themselves and need to rethink their relationship with their environment to stay ahead of the competition and prepare themselves for the long-term impact of today's technological, social and financial breakthroughs.

**Major groups, SME or start-ups all seem to have reached the same conclusions.** We are living through a period of change but innovation cannot happen overnight. It is important to make a distinction between *communicating* about and actually *producing* innovation.

**The practical examples outlined during *GreenCity-Business* suggest that at least 3 years will elapse** between a new idea or project and its actual implementation, between the establishment of new databases and the creation of 3D virtual reality tools, the application to buildings of innovative energy saving and recovery systems.

**To be successful, time is a key factor for proper allowance.** The pace of research can gain momentum provided that innovation (plans, ideas, etc.) + proof of concept (pilot projects) + implementation under market conditions are combined to form a harmonious whole. Innovating and creating economic opportunities is very often contingent on the interplay between different private sector players.

**Research and innovation projects need the support of the public authorities**, but the type of support must vary at urban or regional, national or even broader level (Europe, international). The funds put up in support of projects are rarely the driving force behind innovation, which needs to be based on a real eco-system.

### We have identified 8 areas of action conducive to making the fight against climate change synonymous with economic opportunities:

- ❶ Understanding and developing synergies between innovation and the regions
- ❷ Making innovation more economically resilient
- ❸ Fostering innovative funding solutions
- ❹ Giving priority on connecting infrastructures to closed systems
- ❺ Improving client and environmental knowledge and awareness
- ❻ Agreeing and broadcasting practical measurement yardsticks (e.g. for a shopping mall: CO<sub>2</sub>/visitor, KWH/visitor, etc.)
- ❼ Fine-tuning data capture and selection methods in a world of information overload
- ❽ Driving and boosting a new entrepreneurial culture

### 3/ Giving clusters new impulse and developing communities of innovation

**Academic and research communities have an ever growing role to play in providing focus.** They are at the heart of clusters whose role is not to just accelerate research. They are also a place for addressing and managing multifaceted issues and synergies, regardless of the competition between reference documents and measuring standards. Interdisciplinary gatherings such as *GreenCity-Business* are useful in injecting new life into academic communities, which need to ramp up their activities and engage in networking with think tanks or benchmark congresses, such as *Innovative City*, as close as possible to civil society.

**Ensuring that climate change also equals economic opportunities will require greater exchanges between the regions, companies, academic and research communities.** The development of public and private innovation communities is a catalyst that can serve to create large-scale links between technological changes, economic, statutory and legal challenges in order to:

- 1 **Boost** support for the fight against climate change, enforce more demanding standards and ensure greater awareness of the issues involved.
- 2 **Support** project initiators and escape from a purely administrative, institutional or marketing rationale.
- 3 **Recognise** market maturities
- 4 **Analyse** and anticipate on risk
- 5 **Pool** technologies and knowledge and embark on actual action



### 4/ From smart city to the development of enabling technologies

**Over the last decade, the expression “Smart Cities” has truly captured the imagination.** But the concept is not backed by the degree of scientific knowledge required to measure up to the challenges ahead. “Smart cities” have yet to reach maturity and we need to embark on in-depth research to make technological progress synonymous with sustainable greenhouse gas reductions.

**To ensure that climate change can translate into economic opportunities,** priority has to be given to developing *enabling technologies* rather than working from scratch on *breakthrough technologies*. In other words we need to develop technologies that provide “more for less” or “more with something else”.

**Common sense must prevail.** Data may be available in profusion but this does not automatically mean that it will always be properly consolidated or used to good end. The greater the interaction between technologies, the more complex the resulting systems and the increased likelihood that they will prove unmanageable and unacceptable to citizens and users. In practice, there are a number of data layers that can be put to immediate use at little cost to create new sustainable regional development instruments, *energy master plans* being just one example.

**We suggest that the following 4 avenues should be explored:**

- 1 **Progressing from big data to data driven analytics:** correlating technological breakthroughs with population growth and social changes at all levels
- 2 **Ensuring the convergence of solutions** in the mobility, building and energy fields: new generation roads and intelligent transport, new materials (composites) and existing low energy, renewable materials, creating stocks of carbon for future exploitation (timber work), sensors and measurements
- 3 **Encouraging innovation networking,** from forward planning<sup>5</sup> to implementation of cutting-edge R&D programmes<sup>6</sup> and full-scale tests (proof of concept)<sup>7</sup>
- 4 **On the energy and regional fronts,** promoting the general rollout of energy master plans jointly developed by local communities and industrial energy players, provided that users and citizens are also involved on the basis of an open *community energy management* rationale

5 IRT (Technology Research Institute) Jules Verne located in Nantes, dedicated to cutting edge research into composite structures [www.irt-jules-verne.fr](http://www.irt-jules-verne.fr), ITE (Institute for Energy Transition) Vedecom, Institute for Carbon-free Connected Vehicles and their Mobility ([www.vedecom.fr](http://www.vedecom.fr)) located in Versailles, ITE Efficacity, R&D Institute for energy efficiency for a sustainable city ([www.efficacity.com/home](http://www.efficacity.com/home))

6 5th Generation road programme. <http://www.ifsttar.fr/en/research-experience/major-projects/r5g-5th-generation-road/>

7 Equipment for Excellence (EquipEx) SenseCity [http://www.univ-paris-est.fr/fichiers/Fiche\\_SenseCity.pdf](http://www.univ-paris-est.fr/fichiers/Fiche_SenseCity.pdf)



## 5/ Post COP21

### *From COP21 to Habitat III: fleshing out the bones of the Action Agenda*

After COP21, there is a further major summit looming large in the diaries of the Heads of State and Government, civil society, companies and academics, namely Habitat III scheduled for 2016. 20 years after Habitat II in Istanbul, the aim of this event will be to shape the new world urban agenda.

It is important for us to approach the post-COP21 period pragmatically and to sustain the links between climate change, innovation, urban development and sustainable cities. The COP21 *Action Agenda*, especially in the building, mobility and energy sectors, has a long-term dimension. It needs to be able to rely on the clusters and innovation communities existing across the world.

### *GreenCity-Business to become a permanent feature*

We confirm that *GreenCity-Business* is to become a permanent feature. It offers the opportunity to cement knowledge and collect ideas on the links between innovation, research and regional development. *GreenCity-Business* is partnering the Descartes Cluster in its efforts to build up public-private links, develop the excellence institutes and projects emerging from the

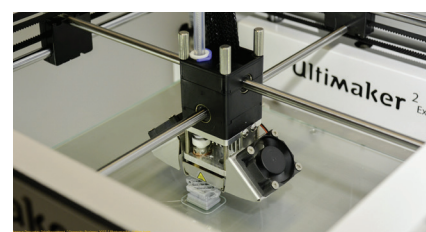
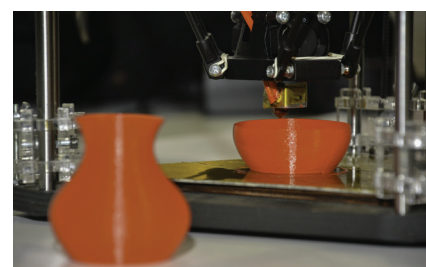
Future Investment Programme (PIA), reinforcing the economic fabric, continuing to improve training (refresher courses in particular) and boosting the flexibility and attractiveness of the ecosystem as a whole. The topic of *Mastering usage* could be selected as a topic for the next session.

To successfully negotiate the energy transition process in the regions, it will be vital to breed an atmosphere of confidence and conduct neutral and independent analyses of potential risks. This is where academic and research communities opened to their environment can come in and play a major role.

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